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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,054	06/27/2003	Edwin D. Tenney	FIS.113	6902
24062	7590	09/29/2004	EXAMINER	
CAMORIANO & ASSOCIATES 8225 SHELBYVILLE ROAD LOUISVILLE, KY 40222			CHIESA, RICHARD L	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/609,054	Applicant(s) TENNEY, EDWIN D. JL	
	Examiner Richard L. Chiesa	Art Unit 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

SN 10/609,054

DETAILED ACTION

Drawings

- (1.) The drawings filed on June 27, 2003 are acceptable to the examiner.

Claim Rejections – 35 USC 112

- (2.) Claims 1-23 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the reasons for this rejection are: (A) The claims are ambiguous because there is apparently no antecedent basis for the expressions “said inner side wall” (claim 1, line 10; claim 14, line 10), and “said outer side wall” (claim 1, line 11; claim 20, line 2). (B) Claim 15 is confusing because it appears to contradict independent claim 14. This is because claim 14 recites that the inner side wall has the same radius as the radius of the cyclone body but claim 15 defines the inner wall as a separate wall from the cyclone body wall.

Claim Rejections – 35 USC 103

- (3.) The following is a quotation of 35 USC 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(4.) Claims 1, 2, 4, 6-8, 12, 14, 18, 19, 21, and 23 are rejected as unpatentable under 35 USC 103(a) over the admitted prior art shown in Figures 1, 1A, 2, and described on pages 1-3 of the specification in view of U.S. Patent No. 418,835 to Allington. The admitted prior art shown in Figures 1, 1A, 2, and described on pages 1-3 of the specification discloses a cyclone separator substantially as claimed. It would appear that the admitted prior art does not disclose an inlet path inner side wall that either conforms or has the same radius as the cyclone body wall. In any case, Allington (note Figures 1, 2) teaches the well-known use of an inlet path inner side wall 2 which either conforms or has the same radius as the cyclone body wall 1 in a cyclone separator for the purpose of ensuring a compact assembly (note page 1, lines 26-33). Consequently, it would have been obvious to one of ordinary skill in the art to employ an inlet path inner side wall which conforms or has the same radius as the cyclone body of the admitted prior art cyclone separator in order to produce a compact assembly as taught by Allington.

(5.) Claims 3, 5, and 20 are rejected as unpatentable under 35 USC 103(a) over the prior art as applied to claim 1 in paragraph 4 above and further in view of the U.S. Patent No. 678,451 to Allington. The prior art, as described above in paragraph 4, discloses a cyclone separator substantially as claimed with the possible exception of a constant width

in the inlet path. Allington ('451) teaches the use of a constant width in the inlet path of a cyclone separator for the purpose of ensuring the most efficient flow conditions (note ref. letter G, Figs. 1-5, and page 1, lines 88-102). It would have been obvious to one of ordinary skill in the art to employ a constant width in the inlet path of the prior art cyclone separator in order to improve fluid flow as taught by Allington ('451).

(6.) Claims 9, 13, and 22 are rejected as unpatentable under 35 USC 103(a) over the prior art as applied to claims 1, 12, and 14, respectively, in paragraph 4 above and further in view of U.S. Patent No. 6,344,064 to Conrad. The prior art, as described above in paragraph 4, discloses a cyclone separator substantially as claimed with the apparent exception of a vessel surrounding the cyclone body. Conrad (note Figures 1 and 2) teaches the use of a vessel 51, 66 surrounding the cyclone bodies 34 of a cyclone separation apparatus for the purpose of maximizing the amount of gas treated (note col. 1, lines 16-52). It therefore would have been obvious to one of ordinary skill in the art to employ a vessel surrounding the cyclone body of the prior art cyclone separator in order to increase the volume of gas treated as taught by Conrad.

(7.) Claims 10, and 11 are rejected as unpatentable under 35 USC 103(a) over the prior art as applied to claim 1 in paragraph 4 above and further in view of U.S. Patent No. 2,786,547 to McCartney. The prior art, as described above in paragraph 4, discloses a cyclone separator substantially as claimed with the exception of flared lips on the inlets. McCartney (note ref. num. 1, Figs. 1, 2, and col. 2, line 50 to col. 3, line 30) teaches the well-known use of flared lips on the gas inlets of cyclone separators for the purpose of

enhancing gas flow and for this same reason it would have been obvious to one of ordinary skill in the art to employ such an expedient in the prior art cyclone separator.

(8.) Claims 15-17 are rejected as unpatentable under 35 USC 103(a) over the prior art as applied to claim 14 in paragraph 4 above and further in view of U.S. Patent No. 1,717,369 Clements. The prior art, as described above in paragraph 4, discloses a cyclone separator substantially as claimed with the apparent exception of a separate inlet path wall. Clements (note Figure 3) teaches the use of a separate inlet path wall 18, 22 in a cyclone separator for the purpose of maximizing gas flow (note lines 41-86) and for this same reason it would have been obvious to one of ordinary skill in the art to employ such an expedient in the prior art cyclone separator.

Conclusion

(9.) The prior art of record cited but not applied is considered pertinent to applicant's disclosure. These references have been cited as art of interest to show other cyclone separators.

(10.) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard L. Chiesa whose telephone number is (571) 272-1154.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane S. Smith, can be reached at (571) 272-1166.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1700 receptionist whose telephone number is (571) 272-0987.

Facsimile correspondence must be transmitted through (703) 872-9306.

Richard L. Chiesa
September 24, 2004

Richard L. Chiesa

**RICHARD L. CHIESA
PRIMARY EXAMINER
ART UNIT 1724**

Sept. 24, 2004